Intergenerational Mobility in American History (Ward, WP)

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Overview

- *Research Question:* Existing research shows that relative mobility has declined for the last 150 years. Is this true?
- *Problem 1:* Long-run mobility estimates only use data on white people.
- *Problem 2:* Parental status is measured with error.
- *Findings:* There is more equality of opportunity now than ever before (but largely because there was a ton of inequality to start with).

Adding Data on Black Mobility

- Most existing studies look only at white people

Other studies take advantage of income data from early 20^{th} century Iowa, but Iowa was 99 percent white at the time.

Therefore, the documented decline in relative mobility is actually a decline in white mobility. An undisputed pattern throughout history is that black sons had limited opportunities to advance, which suggests that overall mobility was not that high (Collins and Wanamaker forthcoming).

Data—Adding observations

- Ignoring enslaved children from the 1850 or 1860 censuses fails to capture the impact of emancipation.
    1. Add Southern-born Black adults from the 1870 and 1880 censuses
    2. Link fathers to a second (and sometimes third) observation
- This linking procedure throws out a lot of data, and the Black observations need to be over-weighted to match the Black share of the population.
- As long as this subsample is representative, this isn't a problem.

Data—Measuring Status

- Song Score
  - Occupations in a given birth cohort are percentile ranked based on their average human capital level
  - Results in a 0–100 score that is merged into the linked sample
  - Captures time-varying changes to relative status
- Adjusted Song Score
  - Aim is to address racial and regional inequality
  - Percentile rank an occupation, race, and region's literacy rate/educational level
    - For example, in the 1850s, 96 percent of white farmers in the North were literate, 85 percent of white farmers in the South, and 44 percent of Black farmers in the South

Measuring Intergenerational Mobility

- Focus on *relative mobility*, which is whether a father's place in the economic distribution matters for the child's place.

- Most common relative mobility estimates come from regressing the son's outcome $y_{i,s}$ on the father's outcome, $y_{i,f}$:

$$y_{i,s} = \beta_0 + \beta_1 y_{i,f} + \varepsilon_{i,s}$$

Within-Between Decomposition of β_1

$$\hat{\beta}_1 = \underbrace{\sum_{g=1}^{G} \theta^g \hat{\beta}_1^g}_{\text{within group}} + \underbrace{\theta^b \hat{\beta}_1^b}_{\text{between group}}$$

- θ^g is the share of variation in the father's status from within-group (white or black)

- θ^b is the share of variation between group means

Accounting for Measurement Error (overview)

- Existing research often only looks at a single-year snapshot of paternal "status", but we have evidence that job data is recorded with *considerable* error.

- The best way to overcome this measurement error is to average over multiple observations, when data are available.

  This instability influences mobility estimates: for a sample of white families, going from one snapshot to averaging three father observations increases the father-son association of status by 27 to 32 percent. . . Assuming classical measurement error, eliminating noise leads to "true" father-son associations that are 45 to 56 percent higher than when using one observation.

Accounting for Measurement Error (theory)

- Assume there is classical measurement error; a parent's income varies from permanent income by random noise,

$$y_{i,f} = y^*_{i,f} + \nu_{i,f}$$

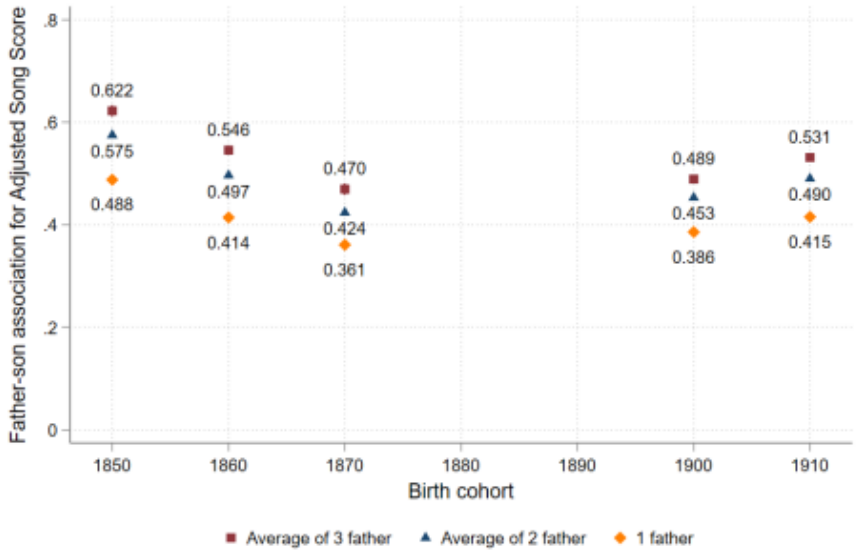
- Attenuation bias falls when we average the father's income over more time periods T,

$$\text{plim}\, \widehat{\beta_{\text{avg}}} = \beta_1 \frac{\text{var}(y^*_{i,f})}{\text{var}(y^*_{i,f}) + \frac{\text{var}(\nu_{i,f})}{T}}$$

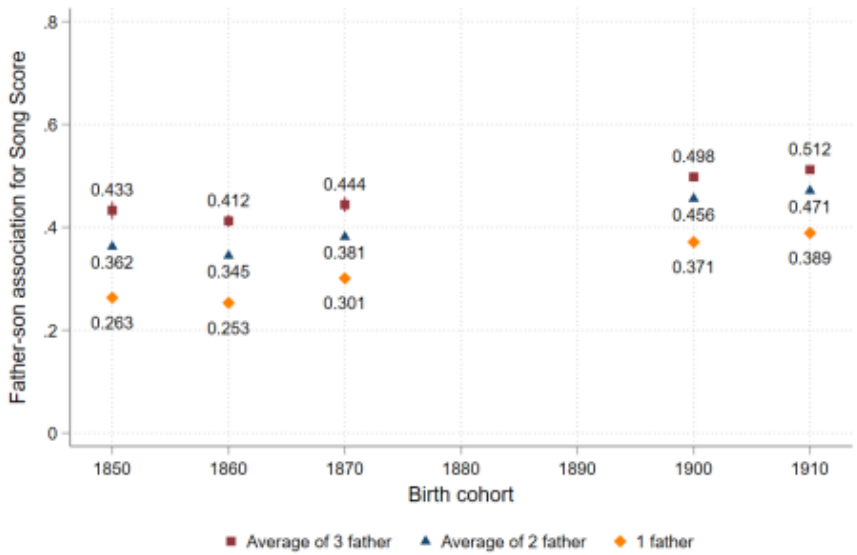
- Modern-day studies use long-run averages of ten or fifteen years
- Historical data rarely go beyond $T = 1$ due to the high costs of linking censuses

Accounting for Measurement Error-Does it matter?

Figure 3. The father-son association is attenuated by measurement error
Panel A. Status measure adjusts for within-occupation differences by region



Panel B. Status measure ignores within-occupation differences by region



Results—Adjusting mobility estimates

- First, use IV to get around classical measurement error problem.
  - Estimates imply that only 27–49 percent of gaps across white families disappeared in the next generation; America not so mobile

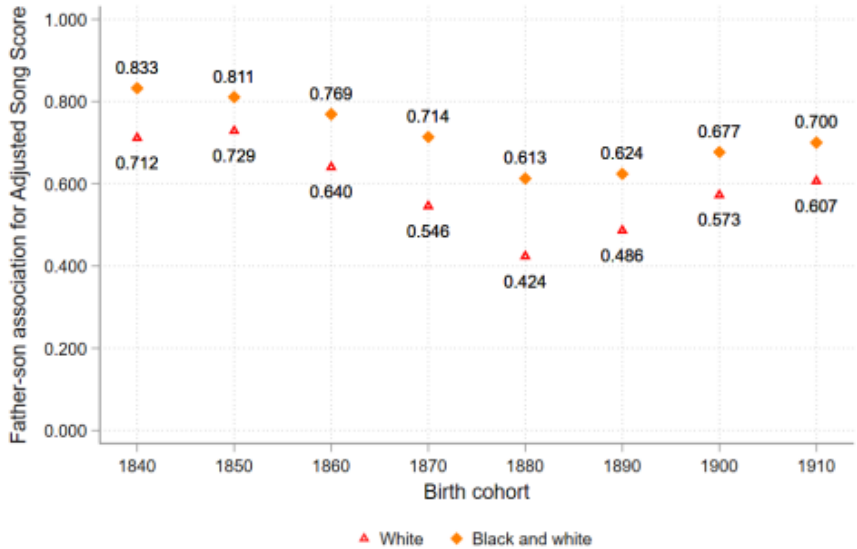
- Now account for racial persistence
  - Initial estimates are only for white males, $\hat{\beta}_1^{\text{white}}$
  - Recall the within-between decomposition,

$$\hat{\beta}_1 = \theta^{\text{white}} \hat{\beta}_1^{\text{white}} + \theta^{\text{Black}} \hat{\beta}_1^{\text{black}} + \theta^{b} \hat{\beta}_1^{b}$$

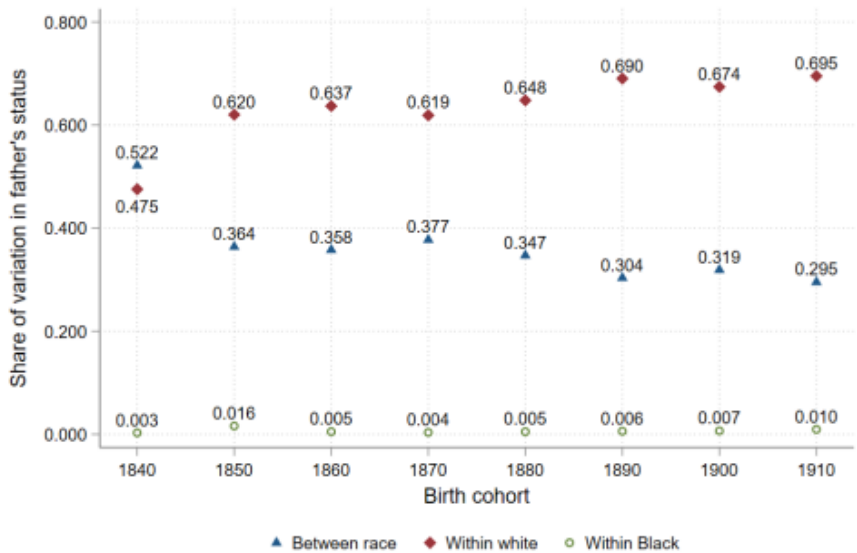
  - Now estimate $\hat{\beta}_1$, which will result in a different estimate if within-Black persistence $\hat{\beta}_1^{\text{Black}}$ is different from within-White persistence, or if between-race persistence $\hat{\beta}_1^{b}$ is strong

Results—Adjust mobility estimates

Figure 5. Father-son associations increase after including Black families
Panel A. Status measure adjusts for within-occupation differences by race and region



Panel B. Within-between decomposition of variation of father's status



Results—Adjust mobility estimates

- Increase in father-son association is not because of an especially high Black association $\hat{\beta}_1^{\text{black}}$

- Large between-race effect explains the increase in the father-son association when pooling Black families

    1. Between-race share of variation was high (peak of 0.52 in 1840, when most Blacks were enslaved; settling around 0.30 in 1910)

    2. Between-race gaps persisted at 0.87 and 1.00. About 30 percent of the historical Black and white association is due to a between-race effect

Conclusions

- Existing mobility estimates are inaccurate because they only focus on data for white males, and ignore the relative immobility of minority groups.

- Adjusting for data composition results in *lower* historical mobility estimates.

- In fact, America has more equal opportunity today than ever before.